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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,589	03/23/2004	Robin David Hill	2432-00015	2232

7590 04/25/2005

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EXAMINER
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BROUSSARD, COREY M

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

10/806,589

Applicant(s)

HILL, ROBIN DAVID

Examiner

Corey M. Broussard

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Lof (PN 5,543,774). With respect to claim 1, Lof teaches a fuse arrangement comprising a circuit board having a plurality of conductive tracks thereon (see Fig. 1), at least two of the conductive tracks being electrically connected to respective terminal regions (see Fig. 2A, left and right circular contacts are the terminals); the said at least two of the conductive tracks each including a fuse region (8) of reduced cross-sectional area, each fuse region being shaped to cause a deviation in the current flow through the fuse region (col 2 lines 49-51), and wherein a part of the conductive track extending between each fuse region and the associated terminal region is free from sharp deviations (see Fig. 2A, a part of 3 extending between the round contact and the first right angle is free from sharp deviations).

3. With respect to claim 2, Lof teaches wherein the fuse region comprises first and second parts which are angled to one another to form the deviation (see Fig. 2B, the vertical and horizontal parts of 8 form an angle).

4. With respect to claims 3 and 4, Lof teaches wherein the first and second parts are angled to one another by an angle falling within the range of 70 to 110 degrees, or about 90 degrees (see Fig. 2B, the parts form a 90 degree angle).
5. With respect to claim 5, Lof teaches wherein a sharp indent is formed in the fuse region to form the deviation to current flow (see Fig. 2A, 2B, when 3 becomes 8 there is a sharp indent reducing the width of the conductor).
6. With respect to claim 8, Lof teaches a fuse arrangement comprising a circuit board having a terminal region and a conductive track electrically connected to the terminal region (see Fig. 1), the conductive track including a fuse region (8) of reduced cross-sectional area, the fuse region being shaped to cause a deviation in the current flow through the fuse region (see Fig. 2B), a part of the conductive track extending between the terminal region and the fuse region being free from sharp deviations (see Fig. 2A, a part of 3 extending between the round contact and the first right angle is free from sharp deviations), and wherein the fuse region comprises first and second parts which are angled to one another to form the deviation (see Fig. 2B, the vertical and horizontal parts of 8 form an angle).
7. With respect to claims 9 and 10, Lof teaches wherein the first and second parts are angled to one another by an angle falling within the range of 70 to 110 degrees, or of about 90 degrees (see Fig. 2B, the parts form a 90 degree angle).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6, 7, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lof (PN 5,543,774) in view of Breece (PN 4,616,286). Lof teaches the device as applied to claims 1 and 8 above, but lacks specific teaching of a clamping device. Breece teaches using a clamping device such as a zener diode (12) or a suppressor (14) with a fuse (see Fig. 1). It would have been obvious to a person of ordinary skill in the art to use the suggestion of clamping devices of Breece with the fuse structure of Lof for the benefit of increased protection and response time to transients in the circuit.

***Response to Arguments***

10. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McGalliard (PN 4,296,398) demonstrating an alternative design suggesting multiple deviation fuses on a single circuit board.

12. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

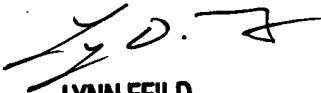
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey M. Broussard whose telephone number is 571 272 2799. The examiner can normally be reached on 7:30-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on 571 272 2092. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2835

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CMB  
cmb

  
**LYNN FEILD**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**